AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1-55. (Canceled)

56. (Currently Amended) An apparatus for the enhanced detection of a biological reaction between a sample and an active area of a biochip, the apparatus comprising:

a printed circuit board;

a biochip having an active area that is disposed on the printed circuit board;

an adhesive that mounts the biochip to the printed circuit board;

a permeation layer disposed on the surface of the biochip;

a fluidic system adapted to flow the sample over the active area of the biochip, wherein the fluidic system comprises

a fluid inlet port;

a fluid outlet port;

a flow cell connecting the inlet port and the outlet port, wherein the flow cell includes at least first and second planar portions defining at least a portion of the flow path from the inlet port to the outlet port, the first planar portion being between the inlet port and the biochip and the second planar portion being between the outlet port and the biochip; and

an optical window, the optical window including a flat bottom portion, that is disposed in a plane parallel to the biochip, the window being between the fluid inlet and

output ports, wherein the flat bottom portion of the optical window is offset from said first and second planar portions of the flow cell, ~~disposed adjacent the flow path and adjacent flow cell portions have spaced apart vertical walls substantially perpendicular to the bottom portion of the optical window that bound the edges of the optical window,~~ wherein the optical window is adapted to permit radiation from the active area of the biochip to external of the apparatus, and wherein the optical window, biochip, and flow cell define a sample chamber.

57. (Previously Presented) The apparatus of claim 56, wherein the fluidic system is in direct contact with the biochip.

58. (Previously Presented) The apparatus of claim 56, wherein the fluidic system includes a flow cell.

59. (Previously Presented) The apparatus of claim 58, wherein the flow cell substantially surrounds the active area of the biochip.

60. (Previously Presented) The apparatus of claim 59, wherein the optical window is a ports window.

61. (Previously Presented) The apparatus of claim 58, wherein the flow cell has a defined volume.

62. (Previously Presented) The apparatus of claim 61, wherein the flow cell has a volume from substantially 5 to 10 microliters.

63. (Previously Presented) The apparatus of claim 56, further including a reservoir attached to the outlet port.

64. (Previously Presented) The apparatus of claim 63, wherein the reservoir comprises a waste tube.

65. (Previously Presented) The apparatus of claim 63, wherein the reservoir comprises an expandable structure.

66. (Previously Presented) The apparatus of claim 56, wherein the printed circuit board is a Personal Memory Card International Association board.

67. (Previously Presented) The apparatus of claim 56, further including wires connecting the biochip to the circuit board.

68. (Previously Presented) The apparatus of claim 67, wherein the wires are embedded in a protective material.

69. (Previously Presented) The apparatus of claim 56, wherein the fluidic system further comprises a flow cell, wherein the optical window has a planar bottom surface, the bottom surface being parallel to the upper surface of the biochip, wherein the inlet and outlet ports are above the upper surface of the biochip.